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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/600,346

11/09/2000

Steven A. Sunshine

018564002410

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07/12/2005

FOLEY AND LARDNER  
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3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

EASTHOM, KARL D

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/600,346

Applicant(s)

SUNSHINE ET AL.

Examiner

Karl D. Easthom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

The previous indication of allowance is hereby withdrawn due to the interference proceeding noted below at note 1, where at least claim 20 to the Martin (6,194,769) patent is deemed to be prior art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (6,194,769) <sup>1</sup> in view of Debe (5238729). Martin discloses the claimed invention at claim 20 the computer and array at Figs. 1a, 1b and 2, and cols. 3-4, lines 60-20, where one sensor having the aligned particles in a nonconductive region is disclosed, and is used to detect analytes. Debe discloses at the top of col. 23, an array of two or more sensors employed to compare the changes in the array to a calibration table in order to detect a variety of chemicals so that such a modification would have been obvious. Claims 2, 29, and 32 follow from above. In claims 3 and 5, the magnetic field is used at the top of Martin col. 4. (While claim 20 of Martin is the prior art, presumably, the method of making the product of claim 20 is also prior art, because it must be enabled to support an claim involved in an interference). Or as an alternative to claims 3 and 5, and for claims 4 and 6, how the regions are aligned is not a product limitation that creates a distinct product since the regions are

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<sup>1</sup> At least claim 20 of Martin is prior art due to the parent application 10/083984 of this application having lost an interference proceeding with Martin, US 6194769, at least on claim 20.

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aligned, as it is a process step. In claim 7, the particles are composite materials as coated magnetic materials as noted at col. 3, lines 35-60. In claim 9, sizes at Debe at col. 8, lines 24-31, discloses particles smaller than 0.1 $\mu$ m (much smaller than 100nm), thus suggesting that nanoparticles can be employed, so that such a particle would have been obvious. In claim 10, metals such as iron, steel, etc. are disclosed at the top of col. 4. In claim 11, a cobalt alloy is noted at the top of col. 4, so it is a magnetic alloy. In claim 30, steel at the top of col. 4 comprises iron. In claims 31-35, Debe at col. 9, lines 15-50 disclose a wide class of polymers including organic polymers and cellulose, for example, so that such classes of materials would have been obvious where claim 1 of Martin discloses that any nonconducting medium can be used around the structure particles, and Debe discloses column like structures in a nonconducting medium for the same purpose, for detecting chemicals. In claim 36, since the same materials are employed as disclosed by applicant, the same analytes can be detected. For claims 7,8, 10, 11, 15, 17, and 30, carbon, cobalt, iron, nickel, silver, oxides, and copper phthalocyanine are all disclosed prior art materials noted in Debe at col. 1, lines 40-50, top of col. 3, col. 7, lines 50-60, col. 8, lines 50-65, used to detect chemicals, rendering the materials obvious since each employ chemical sensors and each disclose or claim a wide variety or class of conductors in a nonconducting medium, of types of materials known in the art as useful for detecting different chemicals, so that such materials would have been obvious to use in the claimed Martin device. For claims 12-14, Debe discloses coating inorganic whisker like substrates as prior art at col. 7, lines 1-31, with several coatings including precious metals gold, silver, and other metals, at col. 8, lines

30-65, and further discloses that the whiskers are polycrystalline at col. 8, lines 18-23, and also discloses silicon as a semiconductor inorganic material at col. 8, lines 50-65, so that coating such a material would have been obvious for the reasons noted, that is, for detecting different chemicals, as suggested. Further, for claims 12-14, and also for claims 15-16, US patent 4155781, incorporated by reference at Debe col. 7, lines 24-31 as useful particle or whisker like materials, discloses coating of semiconductors with oxides of metals  $\text{SnO}_2$ , so that such a material, or coating a semiconductor with oxides or metals, would have been obvious where Debe discloses the materials as useful for detecting chemicals, and Martin claims a wide variety of materials including any conductors, for the same purpose.


Claims 1-17 and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debe in view Martin et al. Debe discloses the claimed invention as noted above, except the distinct particles comprising the aligned conductive material. (What Debe discloses above is incorporated by reference here, and not repeated for brevity). Martin claims at claim 20, an ordered aggregate of structured conducting particles in a nonconducting medium to measure the concentration of a chemical. Debe discloses an ordered aggregate of whisker like particles 16 in a nonconducting medium 12 at Fig. 1, as a sensor to detect chemicals, so that replacing the columnar whiskers with a columnar set of particles would have been obvious since each make up a column of conductive material and are embedded in a nonconductor to create a chemical sensor. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose

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telephone number is (571) 272-1989. The examiner can normally be reached on M-Th,  
5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Karl D Easthom  
Primary Examiner  
Art Unit 2832

KDE